

Having described the invention, the following is claimed:

1. An arrangement for remotely controlling convenience functions at a plurality of devices, said arrangement comprising:

a plurality of device-based receiver means, each for receiving a remote convenience function request signal and for conveying a remote convenience function request message to a device operations system for use in performing a remotely requested convenience function; and

a plurality of portable transmitter means, each of said plurality of transmitter means being configurable to be compatible with any of said plurality of receiver means for outputting a remote convenience function request signal to cause remote control performance of a function at the respective device.

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2. An arrangement as set forth in claim 1 wherein each of said plurality of transmitter means having:

means for storing transmitter configuration information, wherein the transmitter configuration information is used to configure said transmitter means for compatibility;

means for receiving input from a user to select one of said plurality of receiver means for which said transmitter means is to be compatible;

means for retrieving a subset of the transmitter configuration information from said means for storing in accordance with the received selection input;

means for receiving input from the user indicative of a remote convenience function request;

means for generating a remote convenience function request message that uses the subset of the transmitter configuration information corresponding to the function request input; and

means for transmitting a remote convenience function request signal conveying the request message intended for reception by said selected receiver means.

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3. An arrangement as set forth in claim 1 wherein each of said plurality of receiver means has:

means for storing receiver configuration information, wherein the receiver configuration information is used to configure said receiver means for compatibility;

means for receiving the remote convenience function request signal conveying the request message transmitted by one of said plurality of transmitter means;

means for determining the validity of the remote convenience function request message based upon the receiver configuration information; and

means for conveying the remote convenience function request message to the device operations system of the device whose said receiver means determined that it received a valid remote convenience function request message.

4. An arrangement as set forth in claim 2 wherein each of said plurality of receiver means has:

means for storing receiver configuration information, wherein the receiver configuration

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information is used to configure said receiver means for compatibility;

means for receiving the remote convenience function request signal conveying the request message transmitted by one of said plurality of transmitter means;

means for determining the validity of the remote convenience function request message based upon the receiver configuration information; and

means for conveying the remote convenience function request message to the device operations system of the device whose said receiver means determined that it received a valid remote convenience function request message.

5. An arrangement as set forth in claim 1 wherein said receiver means is part of a transceiver means.

6. An arrangement as set forth in claim 1 wherein said transmitter means is part of a transceiver means.

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7. An arrangement for remotely controlling convenience functions at a plurality of devices, said arrangement comprising:

a plurality of device-based receivers, each for receiving a remote convenience function request signal and for conveying a remote convenience function request message to a device operations system for use in performing a remotely requested convenience function; and

a plurality of portable transmitters, each of said plurality of transmitters being configurable to be compatible with any of said plurality of receivers for outputting a remote convenience function request signal to cause remote control performance of a function at the respective device.

8. A convenience function request message for transmission by one of a plurality of portable transmitters to perform a remote convenience function on a device in an arrangement having a plurality of devices, said request message includes portable transmitter configuration information and device configuration information.

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9. A convenience function request message as set forth in claim 8 wherein:

said portable transmitter configuration information includes a number indicative of the portable transmitter sending the request message; and

said device configuration information includes a number indicative of the device intended to perform the convenience function.

10. A convenience function request message as set forth in claim 9 wherein:

said number indicative of the portable transmitter is a manufacturer's distinctive serial number; and

said number indicative of the device is a device identification number given to the device during configuration of the arrangement.

11. Configuration information stored in the memory of a portable transmitter, said configuration information comprising:

a portable transmitter serial number; and  
a transmitter entity table.

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12. Configuration information as set forth in claim 11 wherein for each device of an arrangement configured in transmitter memory, a portion of said transmitter entity table includes:

- a device identification number;
- an encryption key;
- a sequence counter; and
- a communication channel number.

13. Configuration information stored in the memory of a device-based receiver, said configuration information comprising:

- a device identification number;
- a communication channel number; and
- a receiver entity table.

14. Configuration information as set forth in claim 13 wherein for each portable transmitter of an arrangement configured in receiver memory, a portion of said receiver entity table includes:

- a portable transmitter serial number;
- an encryption key; and
- a sequence counter.

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15. A method for remotely controlling convenience functions on one of a plurality of devices using one of a plurality of portable transmitters in a configured arrangement, said method comprising:

receiving input at a transmitter from an operator designating a device-based receiver from a plurality of device-based receivers for which the transmitter is to be compatible in the configured arrangement;

retrieving a subset of transmitter configuration information from transmitter memory according to the input received from the operator, where the transmitter configuration information allows the transmitter to have compatibility with a plurality of receivers;

receiving input at the transmitter from the operator, wherein the input received is indicative of a remote convenience function request;

generating a remote convenience function request message at the transmitter, where the portion of the subset of the transmitter configuration information that corresponds to the receiver selected by the operator is used in the convenience function request message;

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encrypting the remote convenience function request message at the transmitter;

transmitting the encrypted remote convenience function request message from the transmitter;

receiving the remote convenience function request message at the receiver;

determining the validity of the remote convenience function request message according to the receiver configuration information stored in receiver memory, wherein the receiver configuration information allows the receiver to have compatibility with the plurality of transmitters;

decrypting the valid remote convenience function request message at the receiver that determined that it received a valid remote convenience function request message; and

conveying the remote convenience function request contained within the received convenience function request message to the device operations system of the device whose receiver determined that it received a valid remote convenience function request message.

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